

**Before the
Federal Communications Commission
Washington, D.C. 20054**

In the Matter of)	
)	
Revision of the Commission's Rules)	CC Docket 94-102
To Ensure Compatibility with)	
Enhanced E911 Emergency Calling Systems)	

**AMENDED PETITION FOR TEMPORARY WAIVER OF THE
E911 PHASE II ENHANCED WIRELESS SERVICES**

Rural Cellular Corporation (hereinafter "Petitioner" or "RCC"), by its attorneys, hereby amends the request made by its subsidiary, RCC Minnesota, Inc. for a temporary waiver of the wireless E911 location technology phase-in requirements of the Commission's rules, 47 C.F.R. 20.18(f)¹ and (g)². Specifically, this submission amends and supersedes the pending petition filed September 28, 2001 to include all of Petitioner's affiliated entities in the following states where wireless services are provided: RCC Atlantic, Inc. - Vermont, Massachusetts, New Hampshire and New York; RCC Minnesota, Inc. - Minnesota, South Dakota, Kansas, Oregon, Washington and Maine; RCC Holdings, Inc. - Alabama and Mississippi; SRCL Holding Company, Inc. d/b/a StarCellular - New Hampshire and Maine; Saco River Communications Corporation - Maine; New Hampshire Wireless, LLC - New Hampshire; and, TLA Spectrum, LLC - Minnesota. Petitioner seeks a temporary waiver of the requirement that Commercial Mobile Radio Service (CMRS) carriers selecting a network-based Phase II E-911 solution follow a phased in implementation schedule which requires that a carrier become Phase II compliant within 6

¹ Third Report and Order In Re Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, 14 FCC 17388 (released October 6, 1999).

months of a Public Safety Answering Point (PSAP) request. As set forth below Petitioner currently is in the testing and implementation stages of E-911 Phase I in all of its affiliates' markets. Despite concerted good-faith efforts, Petitioner has not been able to find a viable solution to meet the mandate of implementing Phase II within six months of any current or future request for service. Other carriers have come to the same conclusion, as evidenced by the number of waiver requests before the Commission. Petitioner therefore proposes a modified implementation schedule that will allow Phase II E-911 service to be phased-in as follows: (1) complete switch hardware and software upgrades within 12 months of a PSAP request; (2) roll-out of time-difference of arrival (TDOA) technology to cell sites within the next 12 months; (3) deploy time-difference of arrival - a combined angle of arrival (TDOA-AOA) in its cell sites where needed within the following 24 months; and, (4) ultimately roll-out a plan to improve accuracy, including the addition of cell sites as needed within the next 36 months. Such a request is consistent with the Commission's goals in this E-911 proceeding and is in the public interest.

I. Background

Petitioner is a Cellular Radiotelephone Service and broadband Personal Communications Services provider which offers wireless telecommunications service in rural areas of the aforementioned states. In its Implementation Report originally filed with the Commission on November 9, 2000 and as amended February 8, 2001, Petitioner indicated its intent to employ a handset Phase II E-911 solution consistent with Section 20.18(g) of the Commission's rules. Since that initial filing Petitioner has determined that a handset solution is no longer a possibility since handsets which are compatible with Petitioner's TDMA networks are not available. Therefore, on September 17, 2001, Petitioner filed an amendment to its Implementation Report to indicate its intent to employ a network-based solution to and thereby begin providing Phase II

² Fourth Memorandum Opinion and Order In Re Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, 15 FCC Rcd. 17442 (released September 8, 2000) ("Fourth MO&O")

location information within 6 months of a valid PSAP request. Petitioner's subsidiary RCC Minnesota, Inc. subsequently filed a request for waiver of this requirement due to the problems it discovered while attempting to implement its Phase II plan. Petitioner has now determined that due to its relatively small size combined with the general difficulties and unique challenges faced by rural wireless carriers, compliance with Phase II within 6 months of a PSAP request in any market is not feasible. Petitioner has extensively studied available Phase II location technology offerings, has determined viable paths to compliance with the FCC Phase II performance requirements, and has acquired portions of the supporting technology components where commercially viable. These efforts are described below.

A. Evaluation of existing technologies

Petitioner provides wireless service to its rural service areas using a combination of AMPS and TDMA cellular technologies. Neither of the two categories of location technology – network-based or handset-based – has proven viable in this market. (See Petitioner's previously delivered Implementation Plan.³)

Handset based. RCC originally chose a handset-based position determination approach, as described in the original implementation plan filed with the FCC in February 2001. The rationale for the choice was that available network-based systems were not expected to provide the necessary accuracy. However, over the course of the year, RCC has determined that no GPS-oriented handset-based solution is currently available that is compatible with its installed AMPS/TDMA infrastructure (GPS being the only handset solution proven to meet the E911 performance requirements). As has been demonstrated in the record, vendors have not made location-enabled TDMA/AMPS handsets available to Petitioner, or to other carriers. (See, for

³ E-911 Phase 2 Implementation Plan, as amended, Rural Cellular Corporation and its Subsidiaries, September 17, 2001

example, AT&T's waiver request.⁴) Petitioner's sales volume is not of a size that is adequate to entice vendors to leverage this technology into their product. Petitioner has been unable to obtain a commitment from its supplier to provide location-capable handsets by the Commission's October 1, 2001 deadline for commencing the sale of Phase II-compliant handsets. As a result, handset-based location technology is not an option for Petitioner.

Network based. Having determined that a network-based solution is the only technology available to Petitioner, the performance of such a system has been analyzed. Petitioner has contracted with a leading wireless location engineering services organization in some of their markets to evaluate the theoretical performance of a network-based system in Petitioner's rural markets. The results are not immediately encouraging. The analysis assumes a location receiver resident at each of Petitioner's tower sites in the densest portion of a particular service area, utilization of AOA and TDOA technologies, and performance consistent with current state of the art technology. The analysis tool, which has been successfully utilized for a number of deployments, predicts 100-meter accuracy in only about 23% of the geographic area. (Due to the sparse population of these areas, most points are served by one – or at most two – towers, whereas multiple towers are required for an accurate location estimate.) The value of installing such a location system is clearly minimal, as it comes nowhere near meeting the E911 performance requirements. To reach the performance goals, numerous new tower sites would be required – perhaps twice the number of sites required for voice coverage today. Since this is rural terrain, most of the new sites would require new tower construction as well as power and communication backhaul service. A rough estimate of cost is between ten and twenty million dollars of capital expense, not including ongoing operational costs.

⁴ AT&T Wireless Services, Inc. Request for Waiver of the E911 Phase II Location Technology Implementation Rules, AT&T Wireless Services, Inc., April 4, 2001. Also see Leap Wireless International, Inc. Petition for Partial Waiver of E-911 Phase II Implementation Milestones at 13-16 (August 23, 2001); Inland Cellular Telephone Co. Petition for Limited Waiver of Section 20.18(e) and (g)

B. The Path to Compliance

Petitioner has shown good faith in meeting the Commission's Phase I requirements, using the Intrado MPC plus ALI. Petitioner is currently implementing Phase I service in all of its service areas. Industry leader Intrado will provide the data services for Phase I, and has Phase II data services in place for when the positioning equipment is available.

In addition, RCC has contracted the services of TechnoCom Corporation to help evaluate position determination options. TechnoCom's experience in this area will ensure that all available options are considered, that the deployment of the position determination equipment is executed quickly and efficiently, and that its performance is optimized.

Thus far Petitioner has received Phase II requests only from the State of Minnesota, dated February 1, 2001, and the State of Vermont, dated January 7, 2002. Both requests are for Phase II service within six months.

In light of the Commission's current directives, Petitioner proposes to implement a network-based solution using triangulation of existing cell sites where such triangulation is possible. Specifically, Petitioner proposes the following implementation plan:

- (1) Order and install the switch hardware and software necessary for Phase II within 12 months of a PSAP request;
- (2) Deploy TDOA technology to cell sites in the service area within 24 months of a PSAP request;
- (3) Provide Phase II service, via TDOA-AOA technology to the remaining cell sites in the service area that are capable of obtaining location information by triangulation with at least two neighboring cell sites within the 12 months following (2) above; and,
- (4) Enhance accuracy adding cell sites with TDOA-AOA technology as needed over the following 36 months.

Petitioner's approach here is to concentrate its Phase II resources in those cell sites that can actually use the technology to identify location coordinates. However, this method will only

provide some level of Phase II capability in the service area and within the covered area not all of the calls could meet the Commission's accuracy standard. In order to provide this service to the remainder of its service area many additional cell sites would have to be constructed strictly for the purpose of triangulation, with no voice traffic on those sites. This method would require Petitioner to build triple the number of cell sites, which are expensive and not necessary to carry the voice traffic of Petitioner's subscriber base.

Petitioner hopes that by the time it has completed triangulation in its existing cell sites in the service area, additional technological solutions will be available to implement Phase II in the remaining portion of its service area. Some leading candidates under consideration are mentioned here.

MNLS. Mobile-Assisted Network Location System (MNLS) has been proposed by leading TDMA carriers as an interim solution for TDMA networks. If this technology becomes accepted, Petitioner can adopt it, leveraging the momentum provided by the larger carriers.

GSM E-OTD. The preferred location technology for GSM networks at this time appears to be Enhanced Observed Time Difference of arrival (E-OTD). Should Petitioner find justification to migrate its airlink from TDMA to GSM, this technology becomes a prime candidate for Petitioner's upgraded network.

CDMA handset. Likewise, the preferred location technology for CDMA networks at this time is a handset-based solution. Should Petitioner find justification to migrate its airlink from TDMA to CDMA, this technology becomes a prime candidate for Petitioner's upgraded network.

II. Discussion

Generally, the Commission's rules may be waived when there is good cause shown⁵ and "when special circumstances warrant deviation from the general rule, and such deviation will

⁵ 47 C.F.R. § 1.3.

serve the public interest.”⁶ In the context of E-911, the Commission has recognized that individual waivers that are “specific, focused and limited in scope, and with a clear path to compliance” may be granted where due to “technology-related issues” or “exceptional circumstances,” a wireless carrier is unable to meet the October 1, 2001 deadline.⁷ As explained below, Petitioner’s request satisfies this standard.

First, Petitioner is presenting a waiver request that is specific, focused and limited in scope. The scope of the request is limited to Sections 20.18(f) and (g). Petitioner has made good faith efforts to comply with the other sections of Section 20.18 by implementing the Commission’s Phase I requirements, using the Intrado MPC plus ALI. Furthermore, Petitioner only seeks a temporary waiver with respect to specific service areas once an applicable PSAP request is received. Accordingly, Petitioner’s waiver request is narrower than many others currently before the Commission.

Second, Petitioner’s request is structured with a “clear path to compliance.” Rather than request a “broad, generalized waiver”⁸ or an indefinite extension, Petitioner has formulated a proposed schedule that constitutes the best implementation timeline possible within the constraints of its supplier relationships. Assuming the compatible location technology component is available as promised, Petitioner would be able to begin implementing location-capable technologies within twelve months of a request rather than by six months.

Third, despite its efforts to comply with the Commission’s Phase II requirements in a timely fashion, Petitioner has faced technological issues that have hindered its progress. Specifically, Petitioner has been unable to obtain vendor commitments that would allow it to

⁶ Fourth MO&O at 17457; Northeast Cellular Telephone Co. v. FCC, 897 F.2d 1164, 1166 (D.C. Cir. 1990) citing WAIT Radio V. FCC, 418 F.2d 1153, 1159 (D.C. Cir. 1969).

⁷ See id.

⁸ See id.

begin implementing a solution within six months of a given request. As a relatively small carrier with a primarily rural subscriber base, Petitioner is not able to negotiate directly with the manufacturers that are rolling out network-based solutions. As such, it lacks the ability that larger carriers with nationwide footprints might have to demand that manufacturers provide it with the requisite technology.

Being thus one step further down the “food chain,” Petitioner cannot force manufacturers to roll out the solution needed for its specific network. Under the circumstances, Petitioner is doing its best to come as close as possible to meeting the six month requirement by pursuing discussions with its software vendors.

Grant of the requested waiver is in the public interest. The public policy behind the Commission’s E-911 rules is to meet important public safety needs as quickly as reasonably possible.⁹ Allowing Petitioner to introduce important public safety capabilities on a more graduated schedule would serve this objective. Not only would a delay make it possible for Petitioner to provide superior location accuracy by waiting for the best possible solution, the proposed implementation schedule would have no appreciable effect on the availability of Phase II E-911 in Petitioner’s service area. Under these circumstances, the implementation timetable proposed herein allows for an expeditious and sensible phase-in of Petitioner’s network-based solution.


⁹ See Fourth MO&O, 15 FCC Rcd at 17449.

III. Conclusion

For the reasons set forth above, Petitioner requests a temporary waiver of Sections 20.18(f) and (g) of the Commission's rules. The public interest benefit in this case equals or exceeds that which the Commission has found in other instances to be sufficient for waiver. Accordingly, Petitioner requests that a waiver and temporary extension be granted as proposed.

Respectfully submitted,

RURAL CELLULAR CORPORATION

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April 18, 2002

DECLARATION

I, Elizabeth Kohler, hereby state and declare:

1. I am Legal Services Director of the Rural Cellular Corporation, a Cellular Radiotelephone Service and/or broadband Personal Communications Services provider in Vermont, Massachusetts, New Hampshire, New York, Minnesota, South Dakota, Kansas, Oregon, Washington, Maine, Alabama and Mississippi.

2. I am familiar with the facts contained in the foregoing Amended Petition For Temporary Waiver, and I verify that those facts are true and correct to the best of my knowledge and belief, except that I do not and need not attest to those facts which are subject to official notice by the Commission.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 17 day of April 2002.


Elizabeth Kohler, Legal Services Director of
Rural Cellular Corporation

CERTIFICATE OF SERVICE

I, Loren Costantino, an employee in the law offices of Lukas, Nace, Gutierrez & Sachs, Chartered, do hereby certify that I have on this 18th day of April, 2002, sent by first class mail, a copy of the foregoing AMENDED PETITION FOR TEMPORARY WAIVER OF THE E911 PHASE II ENHANCED WIRELESS SERVICES to the following:

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